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Fatalities

One million global deaths

As we approach the grim milestone of a million people killed by covid-19, **Adam Vaughan** examines the toll of the pandemic so far



MICHAEL DANTAS/AFP VIA GETTY IMAGES

IT BEGAN on 9 January. In a hospital in Wuhan, China, a 61-year-old man became the first person on the planet confirmed to have died from a new coronavirus. At the time, scientists didn't believe there was strong evidence of transmission between humans.

As this magazine went to press, we are nearing a global death toll of a million people after the virus spread out from Wuhan and exploded around the world. The true count is far higher and won't be established for years, as many killed by the virus weren't tested (see "Can we trust the numbers?", right). What happened?

Within weeks of that first reported death in China, cases appeared in Thailand, Japan and South Korea. The first fatality

outside China was confirmed on 2 February in the Philippines. On 11 March, the World Health Organization (WHO) declared a pandemic.

In the months since, virtually no country has gone untouched by covid-19 or the coronavirus that causes it. Only island states, such as Saint Lucia and the Seychelles, and secretive states, including Eritrea, have recorded zero deaths.

Without adjusting for population size, the worst-hit country by far is the US with more than 194,000 deaths, followed by Brazil, India, Mexico and the UK.

At first, the uptick in deaths from covid-19 was gradual. It took two months for the death toll to surpass the 774 killed in the 2003 SARS epidemic, which was caused

A burial taking place in a cemetery in Manaus, Brazil

0.6%

The proportion of deaths that have been in low-income countries

50%

The proportion of global deaths so far that have been in the Americas

650,000

The upper estimate for global influenza deaths each year

by another coronavirus. Then things accelerated (see graph, right). The disease took three-and-a-half months to kill 200,000 people. The next 200,000 deaths occurred in just under two months, and the following 200,000 took a similar amount of time. By late August, it had taken only around one month for another 200,000 people to die.

"The fastest growth has been over that period at the end of July and most of August. Now we're seeing a slight slowing in that death rate," says Hannah Ritchie at Our World in Data, which has been tracking data on the pandemic since the outbreak started.

Every day for the past few weeks, 5000 to 6000 people have died globally from an illness that

nobody had heard of a year ago. Those figures have been stable for the past month, but there is no guarantee that will continue.

"A slow burn can still be very terrible in the long run," says Jennifer Dowd at the University of Oxford. "It's still a wildfire that you want to extinguish. Most of the world is still susceptible so there's plenty of kindling. I think it's going to vary, like a wildfire would, over time and space."

The focus of the pandemic has shifted around the globe

to the first few individuals to die before the numbers became too great to record each life in detail.

"People were asking how bad is this compared to flu? Then week 10 [the week beginning 2 March], 11, 12, 13, we could see this wasn't just the flu, this was huge," says Lasse Vestergaard at EuroMOMO, which was set up after the 2009 to 2010 swine flu pandemic as an early-warning system for future pandemics, by monitoring excess deaths in 24 European countries.

New deaths since May have predominantly been in the Americas. "Obviously, the US was very hard hit and Latin America has been very hard hit regionally," says Ritchie. More people have been killed in New York than in any other US state. More than half of the global deaths so far have been in the Americas.

In recent weeks, another shift, as India has become the country with the second highest number of cases after the US. This has been accompanied by a rising death toll, which is now at more than 80,000. "India has had a fairly consistent upward trajectory for some months and isn't showing indications of slowing. But in terms of total population size, it's still a very small fraction," says Oliver Watson at Imperial College London.

In the early days of the pandemic, limited testing for covid-19 hampered the ability of governments and researchers to see how many people the illness was really killing. "At that point, we were slightly confused by the geographical distribution," says Ritchie. "We didn't really know the story elsewhere in the world, particularly in lower-income countries."

As that picture begins to crystallise, some questions remain. "I think the surprise has

Can we trust the numbers?

Counting covid-19 deaths, and comparing them between countries, is surprisingly hard. While researchers want consistent ways of counting, the reality is anything but. Some countries only count a covid-19 death if the person had tested positive using a polymerase chain reaction (PCR) test. A lack of these tests in some places can be a hindrance to counting deaths accurately.

Some countries also include probable deaths, where symptoms and clinical patterns imply covid-19 was the cause but no test was administered. In some European countries, for example, if there is one confirmed covid-19 death in a care home and others died around the same time, they are also recorded as covid-19 deaths. That is likely to lead to overestimates, says Oliver Watson at Imperial College London.

Accounting methods change over time, too, and not all settings for death are counted by all countries. Counting hospital deaths is a given, but care home deaths were only added to official

tallies several months into the epidemic in some countries. In April, the death toll for Wuhan in China jumped by 50 per cent after officials added deaths outside hospitals.

Tallies have also sometimes been revised down. The UK removed more than 5000 deaths from its official count in August after researchers pointed out that covid-19 was attributed as the cause of death to anyone who tested positive and died later, no matter how much later. Now only deaths within 28 days of a positive test are included.

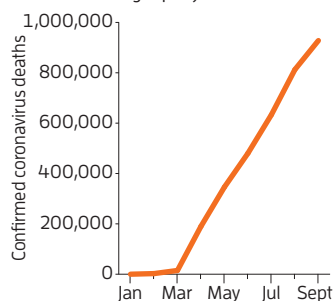
For these reasons, using excess deaths is considered the gold standard. This usually involves comparing weekly data for all deaths in a country against a five-year average for that week. But the baseline is often lacking in low-income countries, meaning other methods are needed to fill the gap. One way will be for researchers to do household surveys on deaths in local communities, and extrapolate the results to national levels.

in the past nine months. Even as deaths emerged around the world in February, the vast majority remained in China. It took severe restrictions on movement for the country's fatalities to peter out in March.

Iran was next. In mid-February, the country announced the first confirmed covid-19 deaths in the Middle East, though subsequent data leaks revealed that the first death was recorded in January.

Then deaths began to rise in Europe. Italy was first, followed by Spain and the UK, where newspapers dedicated front pages

Global deaths from the coronavirus have been rising rapidly since March



SOURCE: WWW.WORLDDOMETERS.INFO, 14 SEPT 2020

been in lower-income countries, specifically in Africa," says Dowd. "If we believe the mortality statistics, it hasn't been as bad there [as expected]." Official counts in African countries have been low. South Africa is the exception, with 15,000 deaths.

Researchers are still working out why case numbers are low in many lower-income countries. Possible reasons include a lack of data, having a younger population or simply that many imposed lockdowns quickly. Another explanation is that they haven't been as heavily seeded

by infections from air travel.

This seeding could also explain why, over time, there has largely been a shift from deaths in high-income countries to lower-income ones. As of 8 September, Watson has found that 45 per cent of deaths have been in high-income countries, 40.5 per cent in upper-middle-income, 13 per cent in lower-middle-income and just 0.6 per cent in low-income nations.

As for personal risk, when the first deaths struck each country, media reports often focused on whether those who had died had underlying health conditions, ➤

such as high blood pressure. “The initial question was how lethal is this virus, is this just picking off the sickest and most frail,” says Dowd. Many comparisons were made with flu, which kills between 290,000 and 650,000 people a year globally.

What has become clear is that covid-19 isn’t just killing those likely to die soon. “On average, these people had a lot of life expectancy left,” says Dowd. “Some estimates are for the average person dying of covid, they had 11 years left.”

Excess deaths

Excess death statistics also imply that most of those who have died from covid-19 weren’t about to die imminently. The US has already had more than 200,000 excess deaths this year, and the UK more than 60,000. If covid-19 was pulling forward deaths by a few months, those countries would have seen far fewer deaths than the long-term average after their covid-19 peaks. That hasn’t appeared and looks unlikely to do so, says Dowd.

Nonetheless, there are chronic health conditions that do increase the risk of death from covid-19, with diabetes and severe asthma among them. In the US, 94 per cent of people who died from covid-19 had underlying health conditions, known as comorbidities, with an average of 2.6 conditions per person.

Those figures were spun last month into a false narrative, repeated by US President Donald Trump, that only 6 per cent had really died of covid-19. In reality, many of the comorbidities were things brought on by covid-19, such as pneumonia.

Being a man, poorer, older and of black or South Asian rather than



CI GUNTHER/EPFL-EFE/SHUTTERSTOCK

white ethnicity have also been associated with increased risk of dying from the illness in some countries. In England, for instance, death rates were higher for black and Asian ethnic groups than white ethnic groups, which was linked to working in occupations more likely to be exposed to the virus, among other things.

“On average, people dying from covid-19 had a lot of life expectancy left. Some estimates are 11 years”

“The very obvious risk factor is age,” says Ritchie. “From 60 onwards, there’s just this very strong gradient. When it’s 80-plus, the case fatality is much higher.” Even so, the disease is unpredictable, and young, healthy people have also died. “It is by far elderly, but middle-aged and

younger groups are not spared,” says Vestergaard. Figures collected by EuroMOMO show that 90 per cent of deaths were in those aged 65 and up, 8 per cent in those aged 45-64 and 1 per cent for ages 5-44.

While immediate deaths are the focus today, experts say the pandemic’s effect on mortality will be long lasting. “The health impacts will carry on much longer, possibly years down the line,” says Ritchie. “It’s not just about who’s dying right now. The health impacts accumulate over time.”

It might take a year or two to see the effects of later diagnosis of cancers due to stressed healthcare systems, for example, or missed vaccinations for diseases like TB.

Similarly, Dowd says we are only just beginning to understand the chronic impacts of covid-19, or “long covid”. “That’s sobering,” she says. “Even if we lower mortality

The Grant African Methodist Episcopal Church in Boston hangs ribbons for those who died from covid-19

now, what other types of scars on health and trends might we see from covid?”

In the meantime, hotspots of covid-19 deaths are still burning brightly. Large numbers of people are dying each day in South America, in particular Brazil, Peru and Argentina, as well as Mexico. India is driving Asia’s toll. And while the US has a better grip on its epidemic, covid-19 is still killing thousands there each week.

There is some good news. Due to the way the world has adapted to the pandemic, from face coverings and social distancing to earlier detection and better treatments, a repeat of the steep jump in deaths experienced earlier this year is seen as unlikely. “I really don’t see the deaths spiking as much as they did in the beginning, because we’ve learned a lot,” says Dowd. ■

Daily coronavirus news round-up
Online every weekday at 6pm BST
[newscientist.com/coronavirus-latest](https://www.newscientist.com/coronavirus-latest)